Slowing sheet & rill erosion

To slow sheet and rill erosion on cropland, you need to leave cover on the soil to prevent falling raindrops from splashing and dislodging the soil. You also need to help rainwater and runoff soak into the soil rather than run off a hillside, tearing more topsoil loose as it runs off the land. Basic soil-saving methods include some type of ground cover, cropping patterns and structures that hold water on the soil to allow infiltration. Since sheet and rill erosion account for the majority of sediment in waterways, practices that control sheet and rill erosion improve water quality. They also benefit fish, other aquatic life, and wildlife.

Protective ground cover of crop residues, grass, or trees is a basic conservation method to combat sheet and rill erosion.

Crop residue management, also called conservation tillage, leaves last year's crop residue on the surface before and during planting operations by reducing tillage operations and turning the soil less. Advantages:

- Provides cover for the soil at a critical time of the year, preventing soil erosion, improving water quality, and helping wildlife and aquatic habitat.
- Residue improves soil tilth and adds organic matter for a healthy, living soil.
- Fewer trips and less tillage reduce soil compaction.
- Time, energy and labor savings are likely.

Contour farming - tilling and planting around the hill with nearly level rows—creates hundreds of small ridges on a hillside. These ridges slow water flow and increase infiltration to reduce erosion.

- Contouring can reduce soil erosion by as much as 50% from up and down hill farming.
- Most landowners can contour with little guidance.

Stripcropping and crop rotations ensure crops are changed year by year in a planned sequence. These are common practices on sloping soils because of their potential for soil saving. Stripcropping saves soil because half the slope is in soil-conserving legumes or grasses most of the time.

- Rotation also reduces fertilizer needs, because alfalfa and other legumes replenish nitrogen that's been removed by grain crops.
- Pesticide costs may be reduced by naturally breaking weed, insect and disease cycles.
- Meadow or small grains cut soil erosion and improve soil condition.
- Crop rotations add diversity to the land.

This ground cover left by conservation tillage helps save soil and moisture and helps control weeds.

conservation tillage

Rotating row crops in alternating strips with legumes or other soil-saving plants slows erosion from both the wind and water.

reduce sheet & rill erosion

Grass strips placed in contoured rows help catch the soil, break up steep slopes and reduce sheet and rill erosion.

GRASS AND TREE PLANTINGS provide excellent ground cover.

- Healthy, well-managed woodlands and grass lands provide long-term wildlife habitat.
- Matching tree or grass species with soil types prevents soil erosion, increases income, and boosts productivity.

CONTOUR BUFFER STRIPS - strips of grass in a contoured field help trap sediment and nutrients. Similar to stripcropping, but with narrow, permanent grass strips.

- Vegetation provides cover and habitat for small birds, mammals and beneficial insects.
- The strips reduce erosion by slowing water flow and increasing water infiltration.

COVER CROPS are close-growing crops that cover the land to protect the soil when crop residues are not adequate. Cover crops:

- keep ground protected.
- add organic matter to the soil.
- trap nutrients and reduce weed competition.

TERRACES are earthen structures that intercept runoff on moderate to steep slopes. They reduce the rate of runoff and allow soil particles to settle out. The resulting cleaner water is then carried off the field in a non-erosive manner.

Terraces can be used on fields where sheet and rill erosion or ephemeral gullies are a problem. They can also be used where runoff or sediment could impair water quality or cause damage downstream. Terraces are most effective when used in combination with other conservation practices like conservation tillage, crop rotations and field borders.

There are three types of terraces: narrowbase, grassed backslope and broadbase. Terraces can:

- reduce sediment pollution of lakes and streams.
- trap phosphorus attached to sediment particles.
- provide wildlife cover.

Consult your NRCS conservationist for technical and financial help in protecting your soils from erosion.

terraces

Terraces act like gutters on a roof to catch water and slow it as it crosses a field.

stopping soil erosion

A ground cover of trees or grass is highly effective in stopping soil erosion.

crop rotation